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Contact for lead author: Great Falls Area Office, Great Falls, MT **Reference site used?** No

Date: 04/19/2005 **MLRA:** 46XN **Ecological Site:** Shallow Clay 13-16" p.z. This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators. For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for <u>each</u> community within the reference state (when appropriate), and (3) cite data. Continue descriptions on separate sheet if needed. Weight factors are either 0.5, 1.0 or 2.0. The default factor is 1.0. A maximum of 8 indicators may be changed to 0.5 or 2.0. The rest remain at 1.0.	Wgt. Factor
1. Number and extent of rills: Slopes most common on this site are between 15–35% and with at least 85% of the soil surface well-covered, rills, if evident will be rare, but may occur in bare areas after extreme convection storms – rills in this case would be narrow and less than 10 feet in length.	1.0
2. Presence of water flow patterns: Will be evident on this site with the steeper slopes, and with areas of bare ground, there may be areas which show accumulations of litter due to water movement, even after minor storm events.	1.0
3. Number and height of erosional pedestals or terracettes: Wind erosion will be rare on this site, but water erosion on the steeper slopes may have plants that could have pedestals and terracettes which could be 0.5 inch in height at the top of the slope and 1.0 inch towards the bottom of the slope.	1.0
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground): Bare ground should be 15% or less on this site.	1.0
5. Number of gullies and erosion associated with gullies: Current gully erosion will not be evident on this site, but there may be gullies which have “healed” from the distant past.	1.0
6. Extent of wind scoured, blowouts and/or depositional areas: Appearance or evidence of these erosional features on the landscape would not be present on this site.	1.0
7. Amount of litter movement (describe size and distance expected to travel): Litter movement will be minimal on the gradual slopes, however on the steeper slopes there will be evidence of litter movement (i.e. debris dams) which may travel up to 10 feet.	1.0
8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different): Resistance to erosion will be high with soil stability values of 5 or 6; areas of bare soil on this site may have values between 1 and 4 under plant canopy.	1.0
9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different): Soil surface structure is blocky; A horizon depth is 2 – 4 ”.	1.0
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Dominance of taller, deep rooted bunchgrasses will maximize infiltration and minimize runoff throughout the site.	1.0
11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): Will not be present generally, but there may be areas that have “healed” from former bison trails and wallows as well as more current livestock trails which could have a compaction layer below the soil surface.	1.0
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): Cool season, taller bunchgrasses (Bluebunch wheatgrass, Rough fescue) >> cool season mid grasses (Idaho fescue) > cool season rhizomatous grasses (Western wheatgrass) = perennial forbs > cool season short grasses (Sandberg bluegrass) = perennial forbs > shrubs = warm season shortgrass (Blue grama) = sedges.	1.0
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Will be low for all functional groups in a given year. Prolonged droughts which last more than 3 years may show increases in mortality and decadence for all plant groups.	1.0
14. Average percent litter cover (50 - 55%) and depth (0 – 0.5 inches).	1.0
15. Expected annual production (this is TOTAL above-ground production, not just forage production): 1100 - 1400 #/acre. This would be the expected production for the reference state during adequate moisture years. 1300 pounds would be the expected production in a 15 inch precipitation zone.	1.0
16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, “will continue to increase regardless of the management of the site” and may eventually dominate the site: Blue grama, Japanese brome, a variety of annual or biennial weedy forbs, fringed sagewort, broom snakeweed, curlycup gumweed, prickly pear cactus, cheatgrass.	1.0
17. Perennial plant reproductive capability: During adequate moisture years bunchgrasses will generally produce seeds, however the cool season rhizomatous grasses may not necessarily produce seed even with adequate moisture.	1.0